

CLAIMS

1. A method for applying an electronic signature from a client station, comprising the steps of:
 - 5 /A/ authenticating the client station at a server, thereby establishing an authenticated communication channel between the client station and said server;
 - /B/ generating a private key/public key pair at the client station;
 - /C/ sending from the client station to the server, via the authenticated channel, a request for a signature certificate, generated by means of at least the public key;
 - 10 /D/ sending from the server to the client station, via the authenticated channel, a signature certificate provided in response to said request;
 - /E/ calculating a cryptographic signature at the client station by means of the private key, then destroying the private key at the client station; and
 - 15 /F/ formatting the calculated signature with the aid of the signature certificate received by the client station via the authenticated channel.
2. Method according to Claim 1, wherein steps /C/ and /E/ are executed in parallel at the client station.
3. Method according to Claim 1, wherein steps /B/, /C/, /E/ and /F/ are at least partially executed at the client station under the control of a program
20 downloaded from the server in response to step /A/.
4. Method according to Claim 1, wherein step /A/ comprises mutually authenticating the server and the client station.

5. Method according to Claim 1, comprising the further step of verifying, at the client station, the signature certificate received via the authenticated channel.

6. Method according to Claim 1, wherein the signature certificate
5 obtained by the server has a validity period of at most one day.

7. Method according to Claim 1, comprising the preliminary step of registering the client station with respect to a certification authority with which the server cooperates, or with respect to a registration authority associated with said certification authority.

10 8. A computer program product, comprising instructions to be executed in a client station having authentication resources with respect to an electronic signature assistance server, said instructions including:

- 15 - instructions for generating a private key/public key pair after the establishment of an authenticated channel between the client station and said server;
- instructions for transmitting to the server, via the authenticated channel, a request for a signature certificate generated by means of at least the public key;
- 20 - instructions for receiving from the server, via the authenticated channel, a signature certificate obtained in response to said request;
- instructions for calculating a cryptographic signature by means of the private key, and then for destroying the private key; and
- instructions for formatting the calculated signature with the aid of the signature certificate received via the authenticated channel.

25 9. Computer program product according to Claim 8, wherein the instructions for transmitting the signature certificate request and the instructions for calculating the electronic signature and then for destroying the private key are executable in parallel.

10. Computer program product according to Claim 8, wherein at least some of said instructions form part of a program written in a mobile code language and downloadable from said server (2) after establishment of the authenticated channel.

5 11. Computer program product according to Claim 8, wherein said instructions further include instructions for verifying the signature certificate received via the authenticated channel.

12. Electronic signature assistance server, comprising means of authenticating a client station to establish an authenticated communication
10 channel with said client station, means for obtaining a signature certificate in response to a request received from the client station via the authenticated channel and for transmitting said certificate to the client station via the authenticated channel, and means for downloading to the client station a program written in a mobile code language, including instructions for
15 controlling, at least partially, the execution of the following operations by the client station:

- generation of a private key/public key pair at the client station after the establishment of the authenticated channel;
- transmission to the server, via the authenticated channel, of a request for
20 a signature certificate generated by means of at least the public key;
- reception, via the authenticated channel, of the signature certificate transmitted by the server in response to said request;
- calculation of a cryptographic signature at the client station by means of the private key, followed by destruction of the private key; and
- 25 - formatting of the calculated signature with the aid of the signature certificate received via the authenticated channel.

13. Assistance server according to Claim 12, wherein the signature certificate has a validity period of at most one day.

14. Assistance server according to Claim 12, wherein said operations further comprise a verification of the signature certificate received via the authenticated channel.